



Fisheries New Zealand

Tini a Tangaroa

Proposed subdivision of PAU3 Quota Management Area

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SUBMISSION INFORMATION

Fisheries New Zealand invites written submissions on the proposal to subdivide the PAU3 Quota Management Area (QMA) into two new QMAs. Make sure you tell us in your submission:

- your name and title;
- your organisation's name (if you are submitting on behalf of an organisation); and
- your contact details (such as phone number, address, and email).

All written submissions on the fisheries regulatory proposals must be received by Fisheries New Zealand no later than **5pm, 2 July 2020**.

Submissions can be emailed to: FMSubmissions@mpi.govt.nz

While we prefer email, you can post your written submissions to:

**Inshore Fisheries Management
Fisheries New Zealand
P O Box 2526
WELLINGTON 6140**

OFFICIAL INFORMATION ACT 1982

Note that any submission you make becomes public information. People can ask for copies of submissions under the Official Information Act 1982 (OIA). The OIA says we have to make submissions available unless we have a good reason for withholding it. That is explained in sections 6 and 9 of the OIA.

Tell us if you think there are grounds to withhold specific information in your submission. Reasons might include that it's commercially sensitive or it's personal information. However, any decision Fisheries New Zealand makes to withhold information can be reviewed by the Ombudsman, who may tell us to release it.

EXECUTIVE SUMMARY

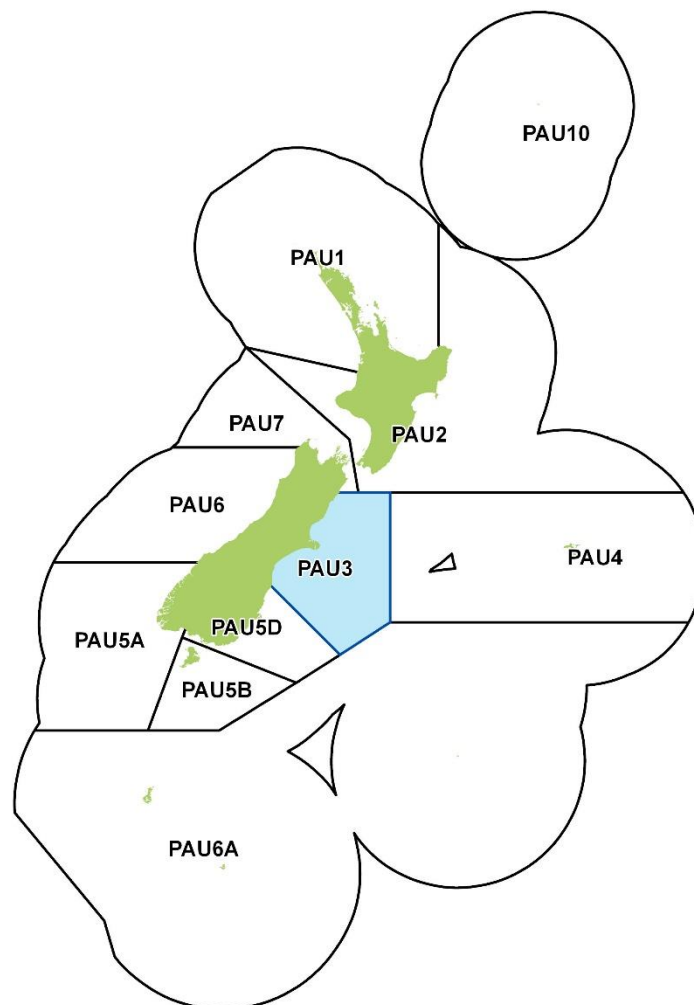


Figure 1: Map of PAU3 Quota Management Area

1. PAU3 is the pāua fishery located along the Kaikōura and Canterbury coasts (**Figure 1**). The fishery was significantly affected by the Kaikōura earthquakes, in particular the northern parts of the Quota Management Area (QMA) where sizable uplift damaged habitat and caused significant mortality.
2. As a result the fishery now has two distinct topographic areas – i.e., the area south of the Conway River, and the area north of the Conway River (which is currently closed to commercial fishing under section 11 of the Fisheries Act 1996 (the Act) as a consequence of the earthquakes).
3. The pāua industry association for the fishery (PauaMAC3), on behalf of quota owners, has proposed that PAU3 be subdivided into two new QMAs. PAU3 would be subdivided by a line starting from a point on land at the Conway River and proceeding in a straight line in a south-easterly direction to a point on the outer limit of the current PAU3 QMA (**Appendix 2 and 3**).

4. Subdivision of the QMA is a key component of the draft PAU3 Fisheries Plan, submitted for approval by PauaMAC3. The Plan identifies the following issues facing the fishery:
- maintaining a sustainable fishery in the southern (open) portion of PAU3;
 - protecting the northern (closed) portion of the fishery while stocks rebuild;
 - developing a management regime to enable the closed area to be re-opened to pāua fishing on a precautionary, adaptive basis; and
 - enabling the entire PAU3 fishery to be managed sustainably at its full potential.

Public consultation on the Plan is running parallel to consultation on the proposed subdivision of PAU3.

5. The request to subdivide the QMA is made under sections 25 and 25A of the Act, and according to the terms set out in the 'Agreement of Quota Owners Concerning Alteration of PAU3 Quota Management Area' (Agreement) signed by over 90% of PAU3 quota owners.
6. If the Minister of Fisheries decides to subdivide the PAU3 fishery, additional consultation will be undertaken regarding the proposed Total Allowable Catch (TAC), Total Allowable Commercial Catch (TACC) and allowances for the two new QMAs. This review would be part of the 2020 sustainability round for fisheries stocks with a 1 October fishing year.
7. Fisheries New Zealand invites submissions on the proposed subdivision of PAU3. Feedback and information provided will be reported to the Minister to inform his decision on whether to approve the PauaMAC3 request to subdivide PAU3.

PURPOSE

8. The purpose of this document is to initiate consultation on behalf of the Minister on the proposed subdivision of the PAU3 QMA, and provide an initial review of the subdivision against the requirements of the Act. Two options are proposed:

Option 1 (preferred)	The PAU3 QMA would be subdivided into two new QMAs by a line starting from a point on land at the Conway River (42°36.885'S and 173°28.113'E) and proceeding in a straight line in a south-easterly direction to a point on the outer limit of the current QMA.
Option 2 (status quo)	The PAU3 fishery would continue to be managed as a single QMA.

9. Tangata whenua, stakeholders and those with an interest in the area are encouraged to provide their views and any other relevant information. Submitters' views will be included in the final advice provided to the Minister of Fisheries.

BACKGROUND

10. Pāua fisheries are highly valued by customary, commercial and recreational fishers. PAU3 is the pāua fishery located along the Kaikōura and Canterbury coasts off the eastern side of New Zealand's South Island. It extends from the mouth of the Clarence River in the north to the mouth of the Waitaki River in the south. PAU3 – South-East (Kaikōura Coast) is defined in Part 3 of Schedule 1 of the Act.
11. PAU3 was introduced into the QMS in 1986 with a TACC of 91.6 tonnes. As a result of appeals to the Quota Appeal Authority, the TACC was increased to 91.62 tonnes in 1995.
12. The November 2016 Kaikōura earthquakes caused significant uplift along parts of the PAU3 coastline north of the Conway River. Along with mortality of adult and juvenile pāua, the earthquakes damaged pāua habitat.
13. In order to protect the surviving pāua populations along the earthquake-affected coastline, an emergency closure was introduced between Marfell's Beach and the Conway River prohibiting the take of all shellfish and seaweed (**Figure 2**). This closure was replaced in 2017 by a closure under section 11 of the Act, which will remain in place until scientific evidence supports re-opening the fisheries.

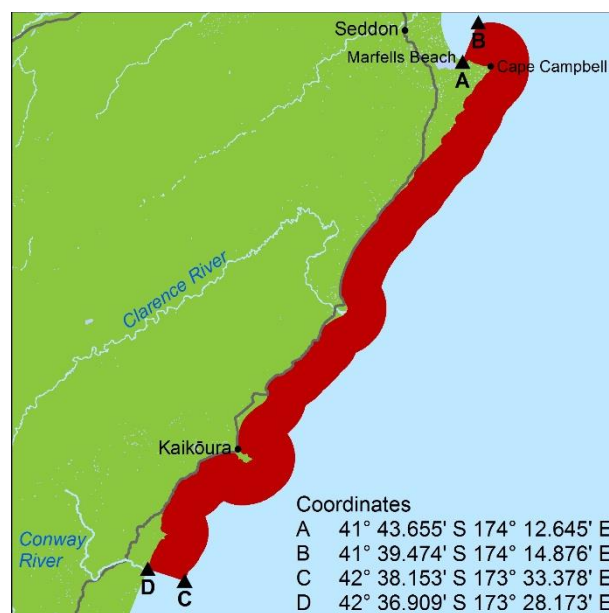


Figure 2: Map showing the area covered by the earthquake-related closure

14. As a result of the closure, important commercial and recreational pāua harvesting areas in PAU3 are no longer accessible. The closure created a significant risk of commercial and recreational fishing effort shifting into adjacent areas outside of the closure leading to overfishing and depletion of pāua populations in these areas.
15. In response, the TACC was halved to 45.8 tonnes, a TAC was set at 79.3 tonnes (including customary and recreational fishing allowances), and the recreational daily limit for pāua was reduced from 10 to 5 per person per day.

16. The long-term effects to the fishery have not been quantified, but include impairment of recruitment as a result of juvenile habitat loss and lowering of carrying capacity and available harvestable yield.
17. PauaMAC3 has submitted a draft PAU3 Fisheries Plan (Plan) to the Minister of Fisheries for approval. The Plan focuses on managing commercial harvesting activity, and includes strategies to improve the sustainable use of the fishery, including subdivision of the PAU3 QMA. Public consultation on the Plan is running parallel to, but separate from, consultation on the proposed subdivision of PAU3.
18. The proposed subdivision would divide the current area by a line starting from a point on land at the Conway River and proceeding in a straight line in a south-easterly direction to a point on the outer limit of the current QMA.
19. Sections 25-26 of the Act, provide for the subdivision of QMAs and set out certain roles and responsibilities to be undertaken by the Minister before a subdivision can take place.
20. This paper assesses the proposal against these criteria.

PROPOSED OPTIONS

OPTION 1: Subdivision of PAU3 QMA into two smaller QMAs

21. Under Option 1 the current PAU3 QMA would be subdivided by a line starting from a point on land at the Conway River (42°36.885'S and 173°28.113'E) and proceeding in a straight line in a south-easterly direction to a point on the outer limit of the current PAU3 QMA. The remaining boundaries of the two new QMAs will remain as currently described in Part 3 of Schedule 1 of the Act (**Appendix 2 and 3**).
22. The species that would comprise the stocks after the alteration will remain the same as currently managed within PAU3 (*Haliotis iris* and *H. australis*), as described in the Agreement (clause 5.5).
23. The subdivision of the QMA would require the cancellation and reallocation of quota shares, and the setting of TACs, TACCs, and allowances for the new QMAs. To give effect to the alteration, a number of consequential regulatory and other amendments will be required. These changes are described in more detail later in this paper.
24. PauaMAC3 requests that the alteration becomes effective from the first day of the next fishing year (1 October 2020) after the gazetting of an Order in Council to give effect to the alteration (the Effective Date). If so, at the close of the day 30 September 2020, all existing PAU3 quota shares would be cancelled, as set out in section 26(4) of the Act. New quota shares would be allocated on and from the Effective Date for the two new QMAs. The quota shares for the two new QMAs will be apportioned in the same way as existing PAU3 quota shares on the day prior to the Effective Date. Any preferential allocation rights held under section 23 of the Act will be apportioned on the basis set out in section 26(5) of the Act.

25. If any person owning ACE for PAU3 under-fishes their ACE entitlement in the fishing year prior to the subdivision, the additional ACE would be allocated as per section 67A of the Act¹. The ACE allocation would be for the new southern QMA – only, and the same amount as would have been allocated in PAU3 had the subdivision not occurred.

OPTION 2: Continue to manage the PAU3 QMA as a single QMA – status quo

26. Maintaining the *status quo* would retain the existing management framework where PAU3 is managed as a single QMA. There would be no change to any of the management settings for the fishery.

ANALYSIS OF PROPOSED OPTIONS

OPTION 1: Subdivision of PAU3 QMA into two smaller QMAs

27. Overall, Fisheries New Zealand’s preference is Option 1— subdivide the PAU3 QMA into two smaller QMAs. The subdivision of the PAU3 QMA would allow sustainability concerns to be better managed in the new smaller QMAs, and would enable the fishery in the north time to rebuild, while supporting the sustainable use of the southern portion of the fishery. It will also align the QMA with iwi and Kaikōura Marine Guardians boundaries and facilitate local engagement in the management of pāua fisheries.
28. In considering whether to recommend the alteration of a QMA into two smaller quota management areas, the Minister must meet the requirements of sections 25 and 26 of the Act. An assessment of these is set out below in the same order as they occur in the Act.

Quota owner support for the subdivision

29. The request to subdivide the QMA is made according to the terms set out in the ‘Agreement of Quota Owners Concerning Alteration of PAU3 Quota Management Area’ (Agreement) signed by over 90% of PAU3 quota owners.
30. On 10 July 2019, PauaMAC3 notified all persons on the quota register of the intention to seek an alteration to the PAU3 QMA.
31. On 16 September 2019, PauaMAC3, on behalf of PAU3 quota owners, publicly notified the quota owner’s intention to seek subdivision of PAU3. This notification occurred in daily newspapers in Auckland, Wellington, Marlborough and Christchurch.

Non-commercial fishing interests

32. Fisheries New Zealand considers non-commercial fishing interests would not be detrimentally affected by subdividing the PAU3 QMA. The new recreational daily limit for

¹ ACE that is not caught in the current fishing year may be transferred to the subsequent fishing year. Under Section 67A of the 1996 Fisheries Act, if an individual has caught less than their ACE holdings, up to 10% of the individual’s ACE holdings may be transferred to the next fishing year. The ACE that is being transferred to the following season will be allocated as soon as is practical after the 15th day following the end of the first fishing year.

pāua was introduced in 2019 and would continue to apply across the subdivided QMAs, as would other current non-commercial fishing rules.

33. Fisheries New Zealand notes that the subdivision would align the QMA boundaries with local Ngāi Tahu Rūnanga and communities of interest (including Te Korowai and the Kaikōura Marine Guardians) in Kaikōura and Canterbury. As a result, the proposal would make management of fishing by all sectors more effective, taking into account the changed nature of the fishery as a result of the earthquakes.

Biological characteristics

34. Pāua use different habitats as they grow from larvae into adults. The uplift and landslips from the earthquake, as well as having caused immediate mortality on a substantial number of juvenile and adult paua in the affected areas, have also adversely impacted both juvenile and adult paua habitat. It is likely that this loss of habitat will, in the short to medium term, result in reduced recruitment into the fishery. This means reduced productivity, in terms of growth and spawning success of pāua that survived the impacts of the earthquake.
35. It is expected to take 5 to 10 years for the ecology of the impacted pāua habitat and the abundance of pāua in these areas to show significant signs of recovering to pre-earthquake conditions. Subdividing the QMA takes this into account by allowing management settings to be tailored using two smaller QMAs.

Consultation

36. Fisheries New Zealand has undertaken preliminary consultation with tangata whenua and stakeholders, and is commencing the formal consultation process on QMA subdivision through release of this discussion document. Fisheries New Zealand seeks submissions from Māori, recreational, commercial and environmental interests on the proposal to subdivide the QMA.

Input and participation of tangata whenua

37. Input and participation of iwi will be through the mandated iwi forum Te Waka a Māui Me Ōna Toka. Preliminary input from the forum supports the proposed subdivision.

Kaitiakitanga

38. Fisheries New Zealand notes the Minister is required to have particular regard to kaitiakitanga when considering alterations to QMAs.
39. Pāua are listed as a taonga species in the Te Waipounamu Iwi Forum Fisheries Plan. That plan contains three objectives which are relevant to the management options proposed for PAU3:
- Management objective 1: to create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and our whānau;

- Management objective 3: to develop environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and
- Management objective 5: to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.

40. Fisheries New Zealand considers that the subdivision of the PAU3 QMA will contribute towards the achievement of these three management objectives in ensuring that fishery remains sustainable and environmental impacts are minimised.

Proposed QMA alteration plan

41. Section 25 of the Act enables the Minister to recommend to the Governor-General, by Order in Council, that a QMA be altered by dividing the area into smaller quota management areas. The recommendation can be made if the Minister complies with section 25A and quota owners who hold in the aggregate not fewer than 75 000 000 quota shares for any stock that would be affected by the proposed alteration have requested the Minister to make such a recommendation. The Minister's recommendation must reflect what is in the quota owners' agreement that provides for all the following matters:

- a) the boundaries of the proposed quota management area or quota management areas:

*The PAU3 QMA will be divided into two new QMAs by a line starting from a point on land at the Conway River (42°36.885'S and 173°28.113'E) and proceeding in a straight line in a south-easterly direction to a point on the outer limit of the current PAU3 QMA. The remaining boundaries of the two new QMAs will remain as currently described in Part 3 of Schedule 1 of the Act. A map showing the proposed QMAs is provided in **Appendix 3** (Agreement, clause 5.5).*

- b) the species that comprise the stock or stocks after the proposed alteration:

*The species that will comprise the stocks after the alteration will be pāua (*Haliotis iris* and *Haliotis australis*) within the boundaries of the two new QMAs (Agreement, clause 5.6).*

- c) the manner in which quota shares are to be apportioned after the alteration:

On the close of the day prior to the Effective Date all existing PAU3 quota shares will be cancelled, on the basis set out in section 26(4) of the Act. New quota shares will be allocated on and from the Effective Date for the two new QMAs. The quota shares for the two new QMAs will be apportioned in the same way as the existing PAU3 quota shares are apportioned on the day prior to the Effective Date (Agreement, clause 5.8).

Any preferential allocation rights held under section 23 of the Act will be apportioned on the basis set out in section 26(5) of the Act.

- d) the interests of aggrieved—
 - i. quota owners who hold quota shares to which the proposed alteration relates; and
 - ii. parties to leases or transfers registered on the Transitional Register in respect of quota to which the proposed alteration relates:

The parties warrant that they have no knowledge of any person who could claim under section 25A(2)(d) that they will be aggrieved or unduly prejudiced if the proposed subdivision proceeds (Agreement, clause 6).

On 10 July 2019 PauaMAC3 notified all persons noted on the quota register as having an interest in the quota to which the proposed alteration relates, of the intention of PAU3 quota owners to seek an alteration to the PAU3 QMA (Agreement, clause 5.2).

There are no parties to leases or transfers registered on the Transitional Register in respect of quota to which the proposed alteration relates (Agreement, clause 5.3).

- e) any other matter required by the Minister to be addressed.

The Minister has not requested any other matters to be included in the agreement.

Timing

- 42. It is proposed that the subdivision would be effective from the first day of the next fishing year, being 1 October 2020 for PAU3 stock.

OPTION 2: Continue to manage the PAU3 QMA as a single QMA – status quo

- 43. Option 2 would retain the existing management framework for pāua species in the PAU3 QMA. If the QMA continues to be managed as a single QMA then sustainability settings will continue to apply generally across the PAU3 QMA.
- 44. Fisheries New Zealand considers the current management framework does not provide the best means of ensuring the sustainable use of pāua in the PAU3 QMA, taking into account the likely slow recovery time for the parts of the fishery affected by the earthquakes, and the need to manage the impacts of displaced fishing effort. A finer-scale and more targeted management approach that allows for use of the southern, less affected, portion of the fishery while providing greater protection for the northern part of the pāua fishery, is warranted.
- 45. Fisheries New Zealand invites submissions on the above assessment.

CONSEQUENTIAL REGULATORY AMENDMENTS

- 46. To give effect to the subdivision of the PAU3 QMA into two new QMAs (if approved), a number of consequential regulatory and other amendments will be required. These include references to PAU3 in regulations and in Schedules to the Act, including the following:

Creation of quota management areas

47. The geographical description of the new QMA will include the division of the QMA by a line starting from a point on land at the Conway River (42°36.885'S and 173°28.113'E) and proceeding in a straight line in a south-easterly direction to a point on the outer limit of the current PAU3 QMA. The remaining boundaries of the two new QMA's will remain as currently described in Part 3 of Schedule 1 of the Act.

Fisheries (Reporting) Regulations 2001

48. Table 1 in Part 1 of Schedule 3 to the Reporting Regulations will need to be amended to specify the new QMA's to be used when reporting.

Inclusion on Schedule 8 of the Act

49. The PAU3 QMA is currently listed on Schedule 8 providing a minimum 1 tonne ACE holding requirement. The new QMA's will need to be listed on Schedule 8 to maintain this requirement.

Inclusion on Schedule 9A of the Act

50. The new PAU3 QMA's will need to be referred to in Schedule 9A to allow for the allocation of cost recovery settlement sum to the stock in the new QMA's.

Inclusion on Schedule 10 Part A of the Act

51. The new PAU3 QMA's will need to be referred to in Schedule 10 Part A which provides for monetary levy per tonne for quota holders for fisheries management services.

Inclusion on Schedule 10 Part G of the Act

52. The new PAU3 QMA's will need to be referred to in Schedule 10 Part G which provides the compliance audit levy.

Other measures

53. Other QMS settings such as the *Deemed Values Order* will need to be amended to revoke the interim and annual deemed values for all PAU3 stocks and to insert new deemed values for each of new QMA areas. The setting of deemed values, should subdivision occur, will be considered as part of the sustainability round to 1 October 2020 along with the setting of TACs, TACCs and allowances.
54. Fisheries New Zealand seeks submissions on these proposed regulatory and other amendments.

CONCLUSION

55. Fisheries New Zealand's preference is that the PAU3 QMA be subdivided into two smaller QMA's. The subdivision of the PAU3 QMA would allow sustainability concerns to be better managed in the new smaller QMA's, and would enable the fishery in the north to rebuild, while supporting sustainable use of the southern portion of the fishery.

It will also align the QMA with iwi and Kaikōura Marine Guardians boundaries and facilitate local engagement in the management of pāua fisheries.

56. Fisheries New Zealand invites submissions on this assessment, and on any alternative options to subdividing the PAU3 QMA that should be considered. This information will be reported to the Minister to inform his decision on whether to proceed with the subdivision of the PAU3 QMA.

NEXT STEPS

57. After the public consultation period has closed Fisheries New Zealand will provide advice to the Minister of Fisheries. If the Minister approves the subdivision of the QMA, Cabinet approval will be sought for the subdivision, and consequential regulation changes.

Appendix 1: Background Information

BIOLOGICAL CHARACTERISTICS OF PĀUA

Pāua form large aggregations on reefs in shallow subtidal coastal habitats. They move over very small spatial scales, such that the species may be considered sedentary. Pāua are broadcast spawners and spawning is thought to occur annually.

Habitat-related factors are an important source of variation in the post-settlement survival of pāua larvae. Growth, shape, and recruitment can vary over short distances and may be influenced by factors such as wave exposure, habitat structure, availability of food and population density.

Due to their biology, high levels of localised fishing pressure make pāua susceptible to local recruitment failure. This occurs when some local populations may be fished hard in comparison to others, which can lead to poor larval distribution due to the limited dispersal range of the species. Because pāua are largely sedentary, fishing pressure can also cause a spatial contraction of populations, which can impede successful spawning (due to reduced density) and subsequently affect overall productivity.

Changes in environmental conditions can impact on productivity of pāua populations. Loss or reduction in drift algae, increased water temperatures, increased sedimentation and run-off can also have an effect on the health and viability of pāua populations at various spatial scales.

COMMERCIAL FISHERY

PAU3 was introduced into the Quota Management System in 1986–87 with a TACC of 57 tonnes. Before the Fisheries Act (1996) a TAC and allowances for customary, recreational or other mortality were not required. As a result of appeals to the Quota Appeal Authority, the TACC was increased to 91.62 tonnes in 1995. Following the 2016 Kaikōura earthquakes which resulted in the loss of pāua habitat due to coastal uplift, the TACC was lowered to 45.8 tonnes and a TAC was set at 79.3 tonnes with a customary allocation of 15 tonnes, a recreational allocation of 8.5 tonnes and other sources of mortality were at 10 tonnes (Table 1).

Table 1: Total allowable catches (TAC) allowances for customary fishing, recreational fishing, and other sources of mortality and Total Allowable Commercial Catches (TACC) declared for PAU3 since introduction to the QMS (all in tonnes).

Year	TAC	Customary	Recreational	Other mortality	TACC
1986 - 1995	-	-	-	-	57
1995 - 2017	-	-	-	-	91.62
2017 - present	79.3	15	8.5	10	45.8

The fishing year runs from 1 October through 30 September.

Most of the commercial catch comes from the northern part of the QMA between the northern end of Pegasus Bay and the Clarence River, and from the southern side of Banks Peninsula.

On 1 October 2001 it became mandatory to report catch and effort on Pāua Catch Effort Landing Returns (PCELRs) using fine-scale reporting areas that had been developed by the New Zealand Pāua Management Company for their voluntary logbook programme. Reported landings for PAU3 are shown in Table 2 and Figure 4.

Since 2001, a redistribution of fishing effort within PAU3 has been undertaken by the industry as a response to fears that the more accessible northern part of the fishery was being overfished. A voluntary PAUA (PAU3) subdivision was agreed by PauaMAC3 which divided PAU3 into four management zones (Table 3). A voluntary harvest cap is placed on each management zone and this cap is reviewed annually. Minimum harvest sizes (MHS) are also agreed for each zone in addition to the legislated Minimum Legal Size (MLS). These are also reviewed annually.

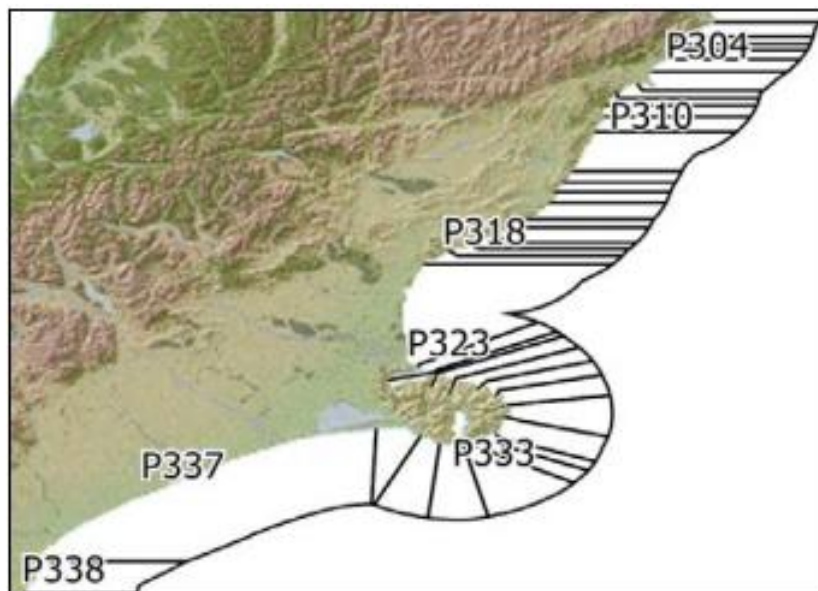


Figure 3: Map of fine scale statistical reporting areas for PAU3

Table 2: TACC and reported landings (t) of pāua in PAU3 from 1983–84 to present.

Year	Landings	TACC	Year	Landings	TACC	Year	Landings	TACC
1983-84	114	-	1995-96	92.89	91.62	2007-08	91.67	91.62
1984-85	92	-	1996-97	89.65	91.62	2008-09	90.84	91.62
1985-86	51	-	1997-98	93.88	91.62	2009-10	91.61	91.62
1986-87	54.02	57	1998-99	92.54	91.62	2010-11	90.4	91.62
1987-88	62.99	60.49	1999-00	90.3	91.62	2011-12	91.14	91.62
1988-89	57.55	66.48	2000-01	93.19	91.62	2012-13	90.01	91.62
1989-90	73.46	69.43	2001-02	89.66	91.62	2013-14	90.85	91.62
1990-91	90.68	77.24	2002-03	90.92	91.62	2014-15	90.44	91.62
1991-92	90.25	91.5	2003-04	91.58	91.62	2015-16	91.73	91.62
1992-93	94.52	91.5	2004-05	91.43	91.62	2016-17	66.29	91.62
1993-94	85.09	91.5	2005-06	91.6	91.62	2017-18	45.59	45.8
1994-95	93.26	91.5	2006-07	91.61	91.62			

Table 3: Summary of the management zones within PAU3 as initiated by PāuaMAC3.

Management zone (since 2001)	Area	Statistical area zone
3A	Clarence to Hapuku	P301–P304
3B	Hapuku to Conway	P305–P310
3D	Conway to Waipara	P311–P321
3E	Waipara to Witaki	P322–P329

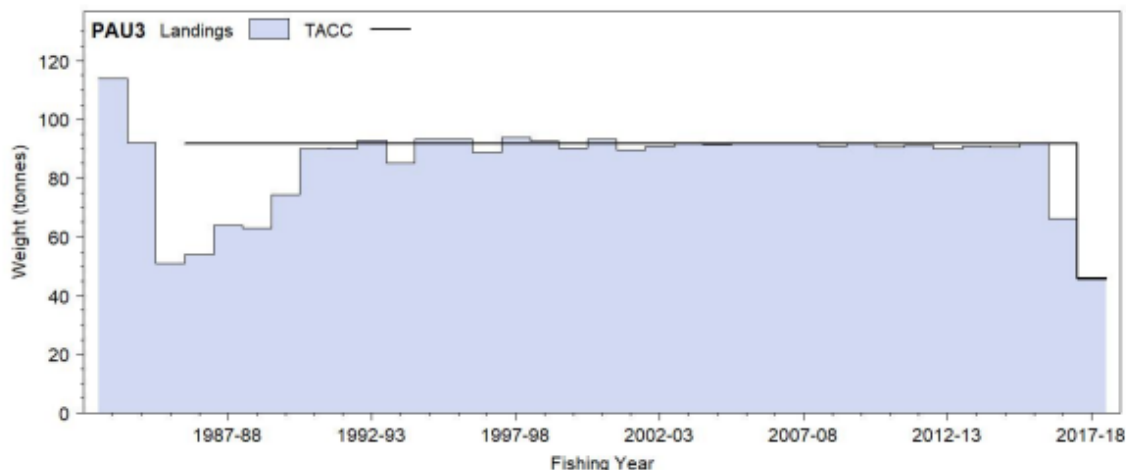


Figure 4: Reported commercial landings and TACC for PAU3 from 1983–84 to present. QMS data from 1983–present

RECREATIONAL FISHERY

The ‘National Panel Survey of Marine Recreational Fishers 2017–18: Harvest Estimates’ estimated that the recreational harvest for PAU3 was 8.8 tonnes. For the purpose of the 2013 stock assessment, the Shellfish Working Group (SFWG) agreed to assume that the recreational catch rose linearly from 5 tonnes in 1974 to 17 tonnes in 2013. Fisheries New Zealand does not have an estimate of recreational pāua harvest for the area of PAU3 now closed to fishing. Anecdotal information indicates that the coastline around Kaikōura has long been a popular location for recreational pāua fishers, and it is likely that a considerable portion of recreational take has frequently come from the area now closed to fishing.

Displaced recreational fishing effort, and increased recreational fishing pressure on localised pāua populations outside of the closed area, meant that the recreational regulations set for PAU3 were longer considered appropriate. The regulations concentrated fishing effort intended for a broad area into a smaller area, which threatened sustainability of pāua in the open areas.

In November 2019 the Minister decided to reduce the recreational daily bag limit for pāua from 10 to 5, and the accumulation limit from 20 pāua or 2.5kg* to 10 pāua or 1.25kg*. (*The weight limit applies if the pāua are in a state that is unable to be counted). The area covered included PAU3 fishery, with the regulations going into effect from 12 December 2019.

The change aims to reduce the risk of serial depletion from shifting recreational fishing after impacts on the pāua populations caused by the 2016 Kaikōura earthquakes. In 2016, the Kaikōura earthquakes caused an uplift of coastline in PAU3. As a result, pāua populations and other intertidal species along these sections of coastline were significantly impacted, with high levels of observed mortality.

CUSTOMARY FISHERY

Estimates of customary catch for PAU3 over the period where reliable estimates are available are shown in Table 4. Landings before 2010–11 do not include the area between the Hurunui River and the South Shore (just north of Banks Peninsula), as Tangata Tiaki were not appointed there until November 2009. Many tangata whenua also harvest pāua under their recreational allowance and these are not included in records of customary catch.

Table 4: Reported customary landings (number of individuals) of pāua in PAU3 from 2000–01 to 2017–18. Landings data before 2010–11 exclude the area between the Hurunui and Pegasus

Year	Landings	Year	Landings
2000-01	230	2009-10	6 467
2001-02	4 832	2010-11	7 449
2002-03	2 449	2011-12	4 242
2003-04	–	2012-13	12 874
2004-05	–	2013-14	7 566
2005-06	1 220	2014-15	7 035
2006-07	4 561	2015-16	11 808
2007-08	5 790	2016-17	9 217
2008-09	8 232	2017-18	374

STOCK INFORMATION

PAU3 is assumed to be a homogenous stock for the purposes of the stock assessment however there is evidence to show this may not be correct (Naylor et al., 2006). The most recent stock assessment was in 2014; however given the potential effects of the earthquake, it is unclear how representative estimates from this assessment are for the current pāua stock.

The coastal uplift due to the earthquake caused substantial mortality in a range of sub-tidal and intertidal organisms (such as pāua) that were exposed above the tide line. The impact

due to mortality over a range of critical life stages, includes the loss of critical intertidal and sub-tidal habitats (Neubauer, 2018).

As broadcast spawners, pāua rely on coralline algae covered boulders in less than 2 metre depth for settlement and as habitat for the first few years of the pāua life cycle (McShane & Naylor, 1995). These depths are well within the range of what was uplifted along most of the coastline. A preliminary assessment of the loss to the pāua fishery estimated that 21% of previous fished areas (by biomass) were potentially lost as a result of the uplift (Neubauer, 2017).

References

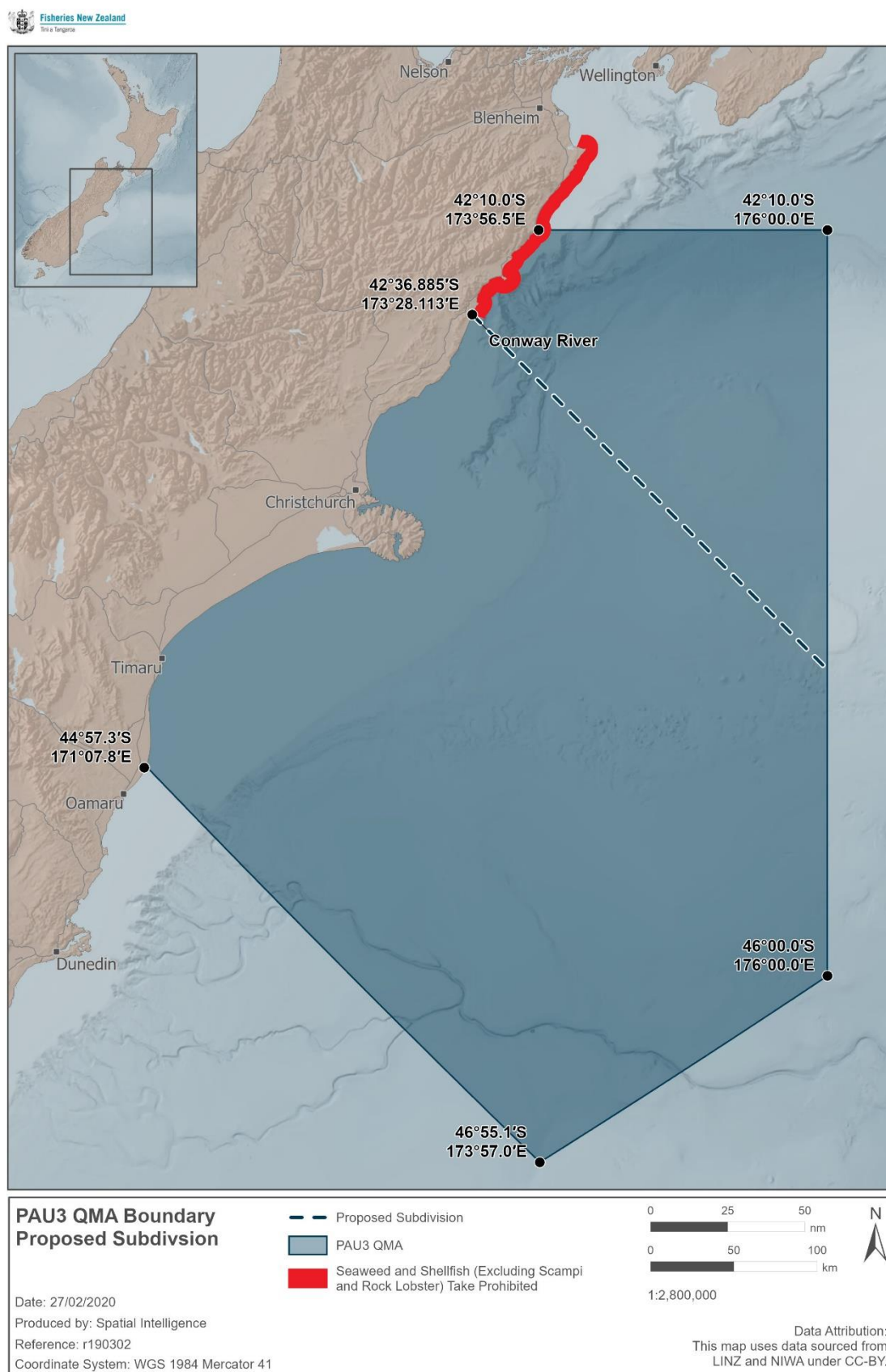
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Appendix 2: Map of proposed PAU3 QMA subdivision



Appendix 3: Maps of proposed new QMAs – PAU3N & PAU3S

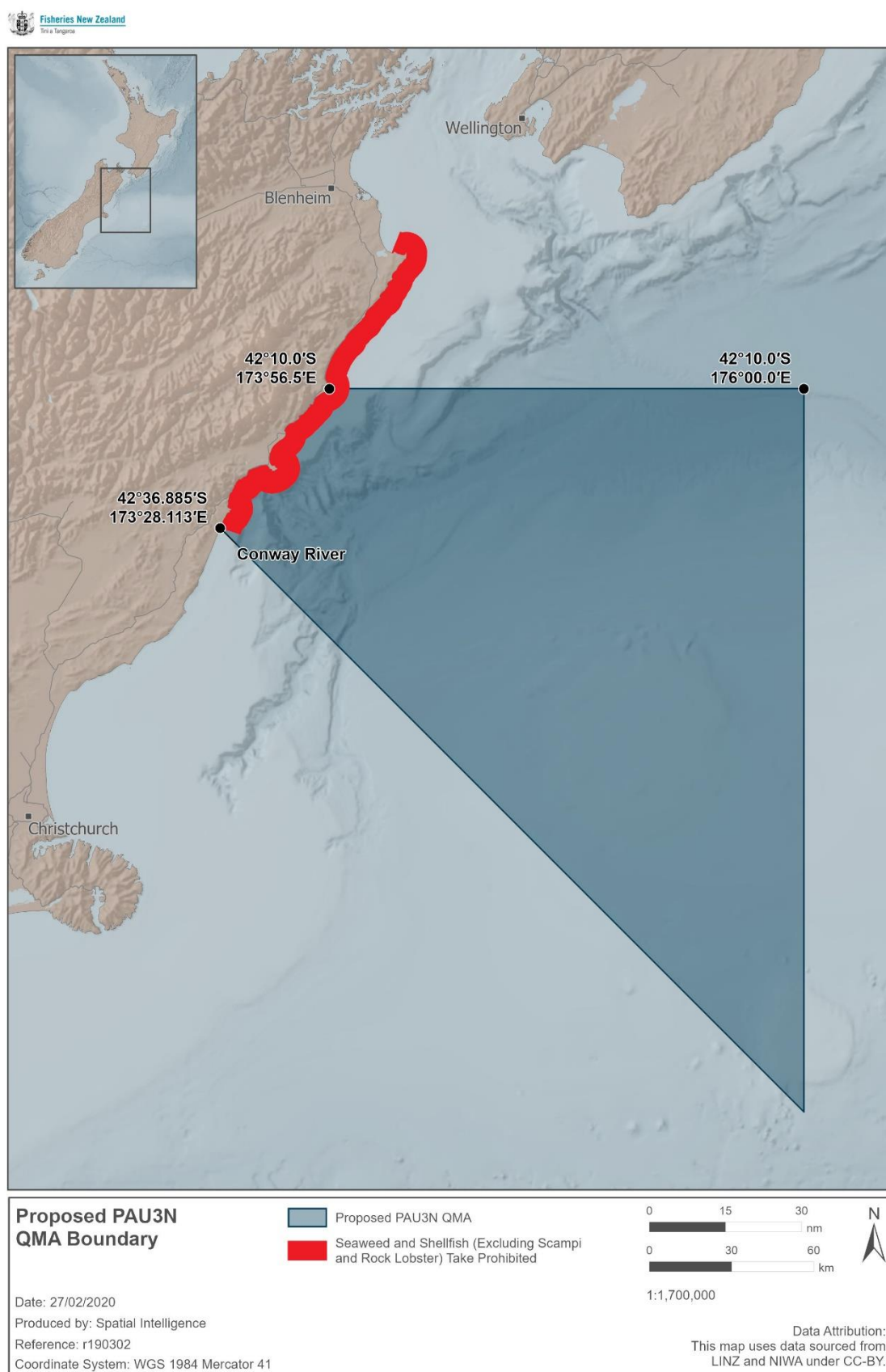


Figure 5: Proposed boundary of new PAU3 north QMA

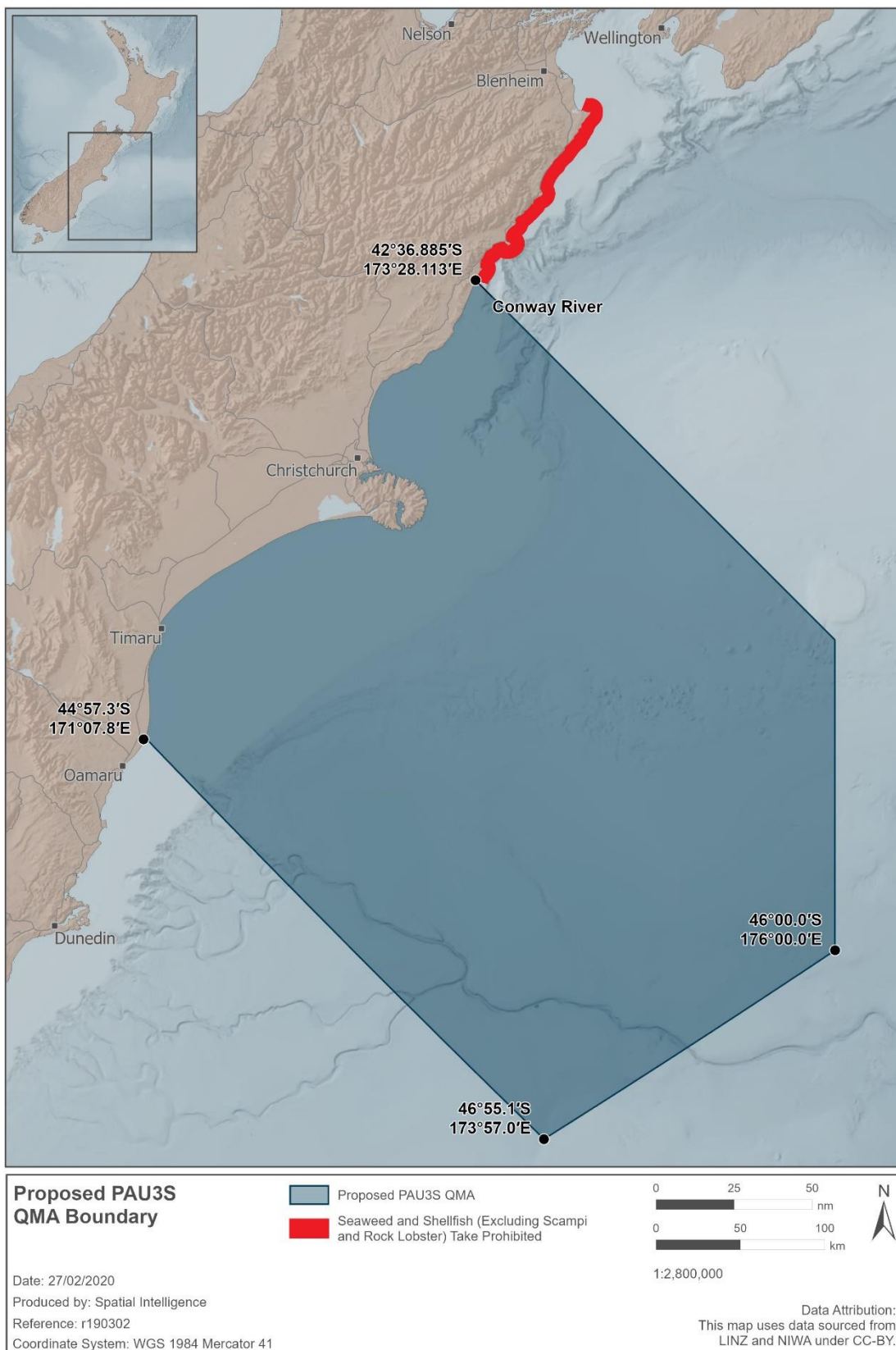


Figure 6: Proposed boundary of new PAU3 south QMA